12. A laser formed by an optical resonator comprising:

a) a pumped gain medium comprising a single-mode optical waveguide, having first and second endfaces where said first endface is an output coupler of said optical resonator, from which medium a beam with total power P_a is emitted from said second endface,

b) coupling optics which receive the beam emitted from said second endface and transmit it to,

~~b)~~ c) a spectrally dependent spatial filtering (SDSF) tuning element which receives said transmitted beam and which allows said received beam to exit from the tuning element as a beam that is attenuated and distorted without a frequency shift, wherein the extent of the attenuation and distortion depends on said received beam wavelength, and wherein said SDSF tuning element includes control means to alter the wavelength dependence of the beam distortion and attenuation, and

d) a return mirror which reflects said non frequency-shifted beam back such that the total round trip loss attains a minimum value at a wavelength λo selected by said SDSF tuning element, whereby λ_o is the wavelength of the beam emitted from said second endface and whereby said reflected beam impinges on said second endface with a total power P_b, with a lesser optical power Po being launched into the gain medium waveguide, such that P_o/P_a has a maximum value at a wavelength λ_o where the total loss due to mode mismatching and attenuation in the external cavity is minimized, where λ_o is selected by said SDSF tuning element in response to said control means applied to said SDSF tuning element, and wherein λ_o is the wavelength of the beam emitted from said first endface.

~~such that the total round trip loss attains a minimum value at a wavelength λ_o selected by said tuning element,~~

~~whereby λ_o is the laser emission wavelength.~~

newly added

newly added

deleted

A laser formed by an optical resonator comprising:

a) a pumped gain medium comprising a singl -mode optical waveguide, having first and second endfaces from which medium a beam with total power P_a is emitted from said second endface, } newly added

b) a volume hologram tuning element which receives said emitted beam and which is aligned such that the propagation direction of said beam within said optical resonator is nominally unchanged by transmission through said hologram only at a wavelength λ_o selected by said hologram, } newly added

whereby said received beam impinges on said first or said second endface with an optical power P_o, being launched into the gain medium waveguide, such that P_o/P_a has a maximum value at wavelength λ_o at which wavelength the total loss in the external cavity is minimized, where λ_o is selected by said volume hologram } newly added

whereby λ_0 is the laser emission wavelength.

~~such that the total round trip loss attains a minimum value at a wavelength~~ → deleted